

REMARKS

The Office Action mailed November 25, 2005, has been received and reviewed. Claims 1 through 44 are currently pending in the application. Claims 1 through 44 stand rejected. Applicant has amended claims 1, 17, and 39, and respectfully requests reconsideration of the application as amended herein.

35 U.S.C. § 102(b) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 6,141,883 to Mitchell et al.

Claims 1 through 14, 16 through 21, 22 through 29 and 30 through 44 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Mitchell et al. (U.S. Patent No. 6,141,883). Applicant respectfully traverses this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Mitchell describes a thickness detector for mail having a fixed roller and a follower roller. The follower roller is rotatably mounted on a follower arm that is pivotable relative to the fixed roller. The fixed roller is mounted in a fixed position relative to the transport path of the mail. The follower roller is biased toward the fixed roller. The follower arm is coupled with a device (an LVDT) for converting mechanical movement into electrical signals. The position of the fixed roller is fixed, and the output of the LVDT is indicative of the position of the follower roller, also indicative of the thickness of the mail between the fixed roller and the follower roller.

Claim 1, as amended herein, recites an “apparatus for determining at least one dimensional value of a substantially planar substrate, comprising: a carrier configured for holding and positioning a substantially planar substrate in a plane, the substantially planar substrate having first and second substantially planar opposed surfaces parallel to the plane; a first linear measuring device including a first movable caliper finger disposed on one side of the plane for measuring a first linear distance from a common zero point location to the first surface of the

substrate along an axis substantially normal to the first and second surfaces, *the first movable caliper finger movable in a linear direction substantially normal to the plane*; a second linear measuring device including a second movable caliper finger disposed on an opposing side of the plane for measuring a second linear distance from the common zero point location to the second surface of the substrate along the axis generally normal to the first and second surfaces, *the second movable caliper finger being coaxial with the first movable caliper finger and movable in a linear direction substantially normal to the plane*, the common zero point location being a location of the end of the first linear measuring device wherein the end of the first linear measuring device is in axial contact with an end of the second linear measuring device; and a calculation device for calculating the first and second linear distances.” (emphasis added)

Mitchell fails to disclose a first movable caliper finger movable in a linear direction substantially normal to the plane and a second movable caliper finger movable in a linear direction substantially normal to the plane. Rather, Mitchell describes a first roller 20 mounted in a fixed position relative to the transport path 5. (Col. 2, lines 21-22) A second roller 30 is rotatably mounted on a pivotable follower arm.

Therefore, it is respectfully submitted that the Mitchell reference fails to expressly or inherently describe each and every element of claim 1. Accordingly, it is respectfully submitted that the rejection to claim 1 should be withdrawn.

Claims 2-14 and 16 are each allowable, among other reasons, as depending from claim 1, which should be allowed.

Claim 3 is additionally allowable because Mitchell fails to describe first and second linear measuring devices configured to provide a zero point value corresponding to a common zero point location in the form of *a linear distance for each of the first and second movable caliper fingers* for use by the calculation device in calculating the first and second linear distances. Rather, Mitchell describes a first, fixed roller, and a second roller coupled with a device for converting mechanical movement thereof into electrical signals. There is no distance measurement for the fixed roller of Mitchell because the fixed roller is mounted in a fixed position relative to the transport path.

Claim 5 is additionally allowable because Mitchell fails to describe a first movable caliper finger *and* a second movable caliper finger *each* biased toward a plane. The first roller 20 of Mitchell is mounted in a fixed position.

Claim 8 is additionally allowable because Mitchell fails to describe a carrier configured to move a substantially planar substrate *in a plurality of directions* within a plane. Mitchell describes only a single transport path 5.

Claim 10 is further allowable because Mitchell fails to describe a calculation device configured to determine at least one *warpage* characteristic of a substantially planar substrate from measurements at the at least three different locations.

Claim 11 is further allowable because Mitchell fails to describe an apparatus configured to measure a first linear distance and a second linear distance from a common zero point location in at least three different locations on first and second surfaces of a substantially planar substrate *in association with movement of the substantially planar substrate by the carrier in a plurality of directions*.

Claim 12 is further allowable because Mitchell fails to describe a calculation device configured to determine at least one warpage characteristic of a substantially planar substrate from some of at least three first and second linear distance measurements.

Claim 14 is further allowable because Mitchell fails to describe a calculation device configured to determine at least one warpage characteristic of the substantially planar substrate from at least some of a plurality of first and second linear distance measurements taken along a line of contact with a substantially planar substrate by first and second movable caliper fingers.

Independent claim 17, as amended herein, recites an “apparatus for determining at least one dimensional value of a substantially planar substrate, comprising: at least one complementary set of linear measuring devices including movable caliper fingers, each of the at least one set comprising: first and second coaxial, opposing, movable caliper fingers with mutually facing terminal ends; *a structure for biasing the first movable caliper finger toward the second movable caliper finger; another structure for biasing the second movable caliper finger toward the first movable caliper finger*; a first contact member on the terminal end of the first caliper finger; and a second contact member on the terminal end of the second caliper finger; wherein the at least one complementary set of linear measuring devices is configured to define a common zero point location at a location of mutual contact between contact members of the first and second coaxial, opposing, movable caliper fingers, to provide a corresponding zero point value as a linear distance for each movable caliper finger, and *to provide displacement values for each movable caliper finger when displaced away from the common zero point location*; a carrier for holding, positioning and moving a substantially planar substrate in at least one direction

parallel to a plane perpendicular to the movable caliper fingers of the at least one complementary set of linear measuring devices to pass the substantially planar substrate therebetween; and a device for receiving zero point values and displacement values and calculating at least one dimensional value associated with the substantially planar substrate.” (emphasis added)

Mitchell fails to disclose a structure for biasing a first movable caliper finger toward a second movable caliper finger and another structure for biasing the second movable caliper finger toward the first movable caliper finger. Rather, Mitchell describes a first roller 20 mounted in a fixed position. Only a second roller 30 is rotatably mounted on a pivotable follower arm 25 that is biased toward the fixed roller 20.

Mitchell further fails to disclose at least one complementary set of linear measuring devices configured to provide displacement values for *each* movable caliper finger when displaced away from the common zero point location. Rather, Mitchell describes a first, fixed roller, and a second roller coupled with a device for converting mechanical movement thereof into electrical signals. There is no distance measurement for the fixed roller of Mitchell because the fixed roller is mounted in a fixed position relative to the transport path.

Therefore, it is respectfully submitted that the Mitchell reference fails to expressly or inherently describe each and every element of claim 17. Accordingly, it is respectfully submitted that the rejection to claim 17 should be withdrawn.

Claims 18-31 are each allowable, among other reasons, as depending from claim 17, which should be allowed.

Claim 19 is additionally allowable because Mitchell fails to disclose a computer and memory and at least one output device for storage and expression of the at least one dimensional value.

Claim 20 is further allowable because Mitchell fails to describe a robotic gripper. Claims 19 and 20 are rejected in the outstanding Office Action under both 35 U.S.C. § 102(b) as being unpatentable over Mitchell and 35 U.S.C. § 103(a) as being unpatentable over Mitchell in view of Gardopee.

Claim 23 is further allowable because Mitchell fails to describe a device configured to determine at least one *warp* characteristic of a substantially planar substrate.

Claim 24 is further allowable because Mitchell fails to describe a carrier configured to move a substantially planar substrate in a plurality of directions parallel to a plane.

Claim 25 is additionally allowable because Mitchell fails to describe an apparatus configured to cause linear measuring devices to provide displacement values from the zero point value in at least three different locations on the substantially planar substrate *responsive to movement of the substantially planar substrate in the plurality of directions*.

Claims 26 and 28 are each additionally allowable because Mitchell fails to describe a device configured to determine at least one warpage characteristic of a substantially planar substrate.

Claims 30 and 31 are each additionally allowable because Mitchell fails to describe a plurality of sets of complementary linear measuring devices. Claims 30 and 31 are rejected in the outstanding Office Action under both 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) as being unpatentable over Mitchell.

Independent claim 32 recites a “method for determining at least one dimensional value of a substantially planar substrate, comprising: establishing a plane parallel to which a substantially planar substrate having a first substantially planar side and a second, opposing, substantially planar side is to be disposed; establishing a common zero point location in or immediately adjacent the plane from which first and second linear distances perpendicular to the plane may be measured; placing the substantially planar substrate parallel to the plane and *with the common zero point location located within the substantially planar substrate; measuring the first linear distance from the common zero point location to the first substantially planar side of the substantially planar substrate* in at least one location along the substantially planar substrate; and *measuring the second linear distance from the common zero point location to the second, opposing, substantially planar side of the substantially planar substrate* in the least one location along the substantially planar substrate.” (emphasis added)

Mitchell fails to disclose establishing a common zero point location located within a substantially planar substrate, measuring a first linear distance from the common zero point location to a first side of the substrate, and measuring a second linear distance from the common zero point location to the second, opposing side of the substrate. Rather, Mitchell describes a fixed roller mounted in a fixed position relative to the transport path of the mail, and a follower roller rotatably mounted on a follower arm that is pivotable relative to the fixed roller. The follower arm is coupled with a device (an LVDT) for converting mechanical movement into electrical signals. The position of the fixed roller is fixed, and the output of the LVDT is

indicative of the position of the follower roller, also indicative of the thickness of the mail between the fixed roller and the follower roller.

Therefore, it is respectfully submitted that the Mitchell reference fails to expressly or inherently describe each and every element of claim 32. Accordingly, it is respectfully submitted that the rejection to claim 32 should be withdrawn.

Claims 33-44 are each allowable, among other reasons, as depending from claim 1, which should be allowed.

Claim 33 is additionally allowable because Mitchell fails to disclose determining a thickness by adding distances.

Claims 35 and 36 are additionally allowable because Mitchell fails to disclose determining any warpage of a substantially planar substrate.

Claim 39 is additionally allowable because Mitchell fails to disclose measuring distances in a plurality of predetermined locations, selecting at least some of the predetermined locations of the plurality to be spaced along a longitudinal extent of a substantially planar substrate, and selecting at least one other location of the plurality on the substantially planar substrate to be spaced laterally from the at least some of the longitudinally spaced predetermined locations.

Claim 41 is further allowable because Mitchell fails to disclose measuring displacements of first and second opposing elements in contact with the opposing sides of the substantially planar substrate. One roller of Mitchell is mounted in a fixed position relative to the transport path, and Mitchell does not disclose measuring a displacement thereof.

Claim 42 is further allowable because Mitchell fails to disclose establishing a zero point location located within the substantially planar substrate as a location of mutual contact of the first and second opposing elements without interposition of the substantially planar substrate therebetween.

Claim 43 is additionally allowable because Mitchell fails to disclose biasing first *and* second opposing elements toward mutual contact.

Claim 44 is additionally allowable because Mitchell fails to disclose measuring the displacements of first *and* second opposing elements.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 6,141,883 to Mitchell et al.

Claims 30 through 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mitchell et al. (U.S. Patent No. 6,141,883). Applicant respectfully traverses this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The nonobviousness of independent claim 17 precludes a rejection of claims 30 and 31 which depend therefrom because a dependent claim is obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also* MPEP § 2143.03. Therefore, the Applicant requests that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection claims 30 and 31.

Obviousness Rejection Based on U.S. Patent No. 6,141,883 to Mitchell et al. in view of U.S. Patent No. 6,242,926 to Gardopée et al.

Claims 15 and 19 through 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Mitchell et al. (U.S. Patent No. 6,141,883) in view of Gardopée et al. (U.S. Patent No. 6,242,926). Applicant respectfully traverses this rejection, as hereinafter set forth.

Claim 15 is allowable, among other reasons, as depending from claim 1, which should be allowed.

Claims 19-20 are each allowable, among other reasons, as depending from claim 17, which should be allowed.

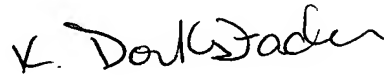
ENTRY OF AMENDMENTS

The amendments to claims 1 and 17 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 1 through 44 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



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